

Attachment C

GENERIC TOXICITY REDUCTION EVALUATION WORKPLAN (TRE) INDUSTRIAL

1. Information and Data Acquisition
 - a. Regulatory information
 - i. NPDES permit limits
 - ii. Trigger
 - b. Facility monitoring data
 - i. NPDES monitoring data
 - ii. In-house monitoring data
 - iii. State agency monitoring data
 - c. Plant and Process Description
 - i. Process and treatment plant description
 - (1) numbers and types of streams
 - (2) their size
 - (3) scheduled changes or events in process stream operation
 - (4) types and configurations of equipment
 - (5) flow equalization facilities
 - (6) records of treatment plant upsets
 - ii. Physical/chemical monitoring data
 - (1) chemical analyses of process streams
 - (2) physical/chemical analyses of treatment streams
2. Housekeeping
 - a. Initiation of housekeeping study
 - i. Identify areas which may contribute to toxicity
 - ii. Reduce these contributions through best management practices (BMPs), administrative, and procedural controls
 - b. Evaluation of housekeeping practices
 - i. Review of plant policies
 - ii. "Walk-through" inspection
 - c. Identification of potential problem areas
 - i. Probability of release of toxic material
 - ii. Type and frequency of release which may occur
 - iii. Quantity of toxic substances involved
 - iv. Toxicity of substances released
 - v. Potential downstream impact of the substances released
 - vi. Effect of release on final effluent
 - d. Identification of corrective measures
 - i. Area cleanup
 - ii. Process or operational changes
 - iii. Material loss collection and recovery
 - iv. Chemical and biological testing of contained waters prior to release from diked storage areas
 - v. Increased storage capacity for contained waters
 - vi. Equipment modifications or changes
 - e. Selection of corrective measures
 - f. Implementation of corrective measures
3. Treatment Plant Optimization
 - a. Evaluation of influent wastestreams
 - i. Raw chemicals or materials used in the process
 - ii. Byproducts or reaction products produced during the process
 - iii. Reaction vessels, valves, piping systems, overflow points, and other mechanical aspects of the system
 - iv. Wastestreams produced, volumes, and routing paths

- v. Non-point sources
 - b. Description and evaluation of the treatment system
 - i. Design basis for each constituent, including variability in flow conditions and concentrations
 - ii. Treatment sequence
 - iii. Performance projections by constituents
 - iv. Operational flexibility of each process
 - v. Treatment objectives and projected effluent standards
 - c. Analysis of treatment system operation
 - i. Flow loading
 - ii. Mass loading
 - iii. Frequency and impact of shock loadings
 - (1) normal cleaning and maintenance
 - (2) spills and upsets
 - iv. Changes in operating procedures
- 4. Chemical optimization
 - a. Information gathering
 - i. Examination of wastestreams produced by specific production processes
 - ii. Chemicals and raw materials and their contaminants and by-products used in the process
 - iii. Chemicals used in treatment
 - iv. Chemicals and material use rates
 - v. Percentage of chemical in final product
 - vi. Chemical reuse and waste recycling activities
 - b. Process chemical review
 - i. List all chemicals used
 - ii. List all quantities
 - iii. Determine pounds per product
 - iv. Determine pounds per gallon of wastewater discharged
 - c. MSDS information review
 - i. Obtain MSDS for all process chemicals discharged
 - ii. Highlight MSDS sections on aquatic toxicity
 - iii. Examine Hazardous Ingredient section and note "hazardous substances" listed
 - iv. Categorize all chemicals by hazard and irritation potential and use standard references to obtain aquatic toxicity information, if possible
 - d. Chemical composition screen of incoming raw materials
 - e. Outcome of chemical optimization phase
 - i. List of all chemicals used in processing and manufacturing the product
 - ii. MSDS and literature reviews will be on file when needed
 - iii. List of all chemicals and raw material purchased on a monthly basis and a record of production volumes during the same time period